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ARTICLE II.

RECENT WORKS BEARING ON THE RELATION OF
SCIENCE TO RELIGION.

BY REV. GEORGE FREDERICK WRIGHT, ANDOVER, MASS.

NO. V.—SOME ANALOGIES BETWEEN CALVINISM AND DARWINISM.

SINCE the publication (April 1877), of the fourth Article in this series, the following books bearing upon the general subject in hand have come under our notice. Where they have already been reviewed in this Quarterly the date is indicated in brackets. Over the signature "S." a list (with brief notices), of twenty-five recent German works bearing upon the subject of Evolution may be found in the number for July 1877, and of several other German and French books, Jan. and July 1878.

Bowne (Professor Borden P.). *Studies in Theism*. [Oct. 1879]. pp. 444. New York. 1879.

Fiske (Professor John). *Darwinism and other Essays*. [Oct. 1879]. pp. 283. London. 1879.

Flint (Professor Robert). *Anti-Theistic Theories; being the Baird Lecture for 1877*. [Oct. 1879]. pp. 557. Edinburgh. 1879.

Haeckel (Professor Ernst). *The Evolution of Man; A Popular Exposition of the Principal Points of Human Ontogeny and Phylogeny*. [Oct. 1879]. 2 vols. pp. 467, 522. New York. 1879.

Freedom in Science and Teaching. With Prefatory Note by F. H. Huxley. [Oct. 1879]. pp. xxxi, 121. New York. 1879.

Le Conte (Professor Joseph). *Elements of Geology: A Text-Book for Colleges and for the General Reader*. [Jan. 1879]. pp. 588. New York. 1878.

Newcomb (Simon, LL.D.). *Popular Astronomy*. [April 1879]. pp. 571. New York. 1878.

Quatrefages (Professor A. De). *The Human Species*. [Oct. 1879]. pp. 498. New York. 1879.

Shields (Professor C. W., D.D.). *The Final Philosophy, or System of Perfectable Knowledge issuing from the Harmony of Science and Religion*. [April 1878]. pp. 609. New York. 1877.

Smyth (William Woods). *The Bible and the Doctrine of Evolution. Being a Complete System of their Truth, and giving a sure Scientific Basis for the Doctrine of Scripture*. pp. 390. London. 1873.

Wallace (A. R.). *The Geographical Distribution of Animals. With a Study of the Relations of the Living and Extinct Faunas as elucidating the Past Changes of the Earth's Surface.* [July 1877]. 2 vols. pp. 607, 503. New York. 1876.

Winchell (Alexander, LL.D.). *Reconciliation of Science and Religion.* [Oct. 1877]. pp. 403. New York. 1877.

We may also mention a book by the writer of this Article, just published by W. F. Draper, on the "Logic of Christian Evidences," which in its first and second parts incidentally treats the topics under discussion in this Series.

I. Introductory Cautions.

To those who believe that the material creation, the mind of man, and the Bible are all the productions of one author, it will not be unexpected if attention reveal internal evidence of this community of origin. It need not surprise such to find a thread of analogy running through the sciences which treat of nature as embodied in matter and mind, and that revelation of the supernatural which more fully unfolds the unseen and the future. The interpreters of these three departments of divine revelation should have many principles in common. It may not, therefore, be irreverent to join together, for purposes both of comparison and contrast, the names of Paul, Augustine, and Darwin—the first, an inspired apostle; the second, a profound philosopher and theologian; the third, a painstaking modern interpreter of nature. It would, indeed, be irreverent to place these names together as standing in anything like the same rank of importance or authority. Therefore let it be expressly understood, at this stage of our discussion, that the names, as representing different systems of thought, are brought together for purposes of contrast as well as of comparison.

The inspired theologian is limited only by the extent of eternity. The third heaven was within the reach of his clarified vision. The theologian is a philosophical interpreter of the apostle, and does for the fragmentary records of inspiration what the palaeontologist does with the scattered remains of extinct animals. By careful study of the conformation and articulation of a few bones the com-

parative anatomist can determine what other bones, and what sinews and muscles, and what hairy covering and digestive organs are complements to the parts discovered. So the philosophic theologian is ever at work upon the typical facts of verbal revelation, arranging around them their natural clothing of flesh and blood, showing how present experiences and newly-discovered facts in other fields of science spring out of and adjust themselves to the pregnant utterances of the inspired writers. The systematic theologian is an exegete, drawing out of the Bible and human history the material from which to construct a system of unending hopes and of eternal aspirations. The naturalist chooses a much humbler sphere for his investigations, and walks by a much dimmer light. With the flickering lamp of experience he gropes his way, between daylight and dark, along the surface of the earth, and stumbles about over the *débris* that is scattered upon it. The naturalist does not concern himself either with the beginning of things or with the end of things. That is work for the philosopher and the theologian. The naturalist studies, with what light he has, the *order* of divine operations within the range of what is visible. The *phenomena of physical nature* are to the man of science what the *words* of the Bible and the phenomena of *human nature* are to the Christian theologian. The axioms and intuitions concerning the divine nature and the authority of evidence are the common property of both.

So far as the present discussion is concerned, it may or it may not be true, that species are of derivative origin, and that natural selection is the main guiding force operative in their derivation from one another. It is sufficient for the purposes of this discussion that the theory has at present a firm hold upon the scientific world. As students of theology we ask: How does this theory, whether true or false, adjust itself to that comprehensive system of theological speculation of whose correctness, in the main, we are persuaded by a variety of cogent evidence.

II. *Salient Features of Calvinism.*

The mantle of Augustine fell upon the theologian of Geneva. But "theologians are still divided on the question as to what constitutes the peculiarity of the Reformed [Calvinistic] church."¹ Much in this Article that is styled Calvinistic or Augustinian, might with equal propriety be labelled "evangelical." The most distinctive point of Calvinism relates to the divine "purposes." As it is desirable to draw comparisons between that distinctive trait and the bent of modern science, we retain the word "Calvinistic," instead of the less explicit and intensive word "evangelical." We fear that those who are merely evangelical will not get the full benefit of some of our analogies. We may further premise that in this discussion we have nothing to do with the mere *minutiae* of the doctrines either of science or of theology. It is only in their broader aspects, in which distinguished men have become representative teachers, that we are viewing the subject. We therefore shall use the word "Calvinism" interchangeably with "Augustinianism," and shall be careful not to make Darwinism responsible for everything Mr. Darwin and his coadjutors have written.

The scientific theory under consideration has already been presented with sufficient fulness.² The theological system is familiar, but for present purposes may be epitomized as follows: God only is self-existent. The universe is his work, and is the embodiment and unfolding of his eternal ideas. The foreknowledge of God comprehends all things. "Known unto God are all his ways from the beginning." Not only is the providence of God concerned in the sparrow's fall and in the fate of each particular hair of our heads, but, paradoxical as it seems, the fore-ordaining providence of God has also comprehended the actions of the free-will of man. And furthermore, notwithstanding the knowledge of all the parts of the universe and the fore-ordination of the system

¹ Hagenbach's *History of Doctrines*. Translated by C. W. Buch (New York, 1862), Vol. ii. p. 160.

² *Bib. Sac.*, Vol. xxxiii. pp. 448-493, and 656-694; Vol. xxxiv. 355-385.

as a whole (and in logical consequence of this fore-ordination, foreknowledge of all) the goodness of God is held to be consistent with the creation of a condition of things in which sin enters in such degree and extent that some of its subjects will be consigned thereby to endless punishment; so that the Author of all things himself can say of some persons, when considered with reference to themselves, it had been better for them if they had never been born.

According to this system, also, the scheme of the universe is so vast that it is unsafe to assume that the happiness of particular individuals, or generations even, much less of animals, is a prominent object of the existing order of things. Calvinism is opposed to utilitarianism as a theory of virtue. The chief end of man is not to seek his own happiness, but the glory of God. The authority of obligation to particular duties is not the perceived bearing of our actions upon the happiness of being, but the perceived evidence that God enjoins the course of action. God's ways, though not absolutely unknown, are often inscrutable, compelling man to walk by faith, and not by sight.

III. *The Ground of Opposition to Calvinism.*

This system of theology is vigorously opposed in many quarters with the objections that it narrows to the smallest sphere, if it does not wholly obliterate, the self-determining power of man's will; that it belittles the true dignity of human nature; that it leaves no ground for the intervention of mercy; that it represents God as at once unfeeling, unjust, and remote from the world and its affairs.

A popular preacher of the radical school exclaims: "The faults [of Calvinism] come from its peculiar doctrine. . . . It makes God dark and awful. . . . He is the Draco of the universe, the author of sin. . . . This system degrades man. It deprives him of freedom. It does not tell of God now near at hand, but a long while ago."¹

¹ Theodore Parker. *A Discourse of Matters Pertaining to Religion.* (Boston, 1842), pp. 455-456.

A leading defender of Arminian theology thus addresses a select audience of Sabbath-school teachers: "Calvin, in whose mind the logical faculty was predominant, and who never hesitated to follow out his own accepted premises to their legitimate conclusion, at length developed a complete system of philosophical theology, which so exalted the divine sovereignty in grace and providence as to leave no room for the action of any creature, except as moved and actuated by the power of God. Whatever might occur must, therefore, be interpreted as the outcome of the will of God, whether of righteousness or of sin, eternal life or eternal death. The only possible laws in the universe were the divine decrees, from which there could be no departure; the actions of all creatures were subject to his hands, in both their inception and their execution; and the whole universe, physical and spiritual, was subject to a complete order of predestination. As a piece of machinery, the system was organically complete and sublimely effective; but, at the same time, to ordinary minds it seemed utterly heartless and cruel as destiny itself. . . . This system proceeds upon the assumption of such a real and practical or administrative sovereignty in God over every man and his eternal destiny that the whole thing admits of neither conditions nor qualifications. The ordering of the affairs of the universe is an eternal and unalterable decree, complete in the divine mind from eternity, and unfolding in part in the form of events within the realms of time. . . . It is, in its logical outcome, simply fatalism, substituting the name of its God for the mythological Jupiter or Zeus, or the philosopher's fate or chance or destiny — names that designate the unknown force that sustains and directs the course of affairs in lofty disregard of the weal or woe of the intelligent and sensitive beings that are evolved in its resistless movement. But its God is not that 'Father of the spirits of all flesh,' of whom and of whose abounding mercies the Bible tells us."¹

Now if the Darwinian can show that his theory of the

¹ Rev. Daniel Curry, D.D. Chatauqua Address, Aug. 12, 1879.

origin of species is, from a theological point of view, open only to these same and analogous objections, then he may shelter himself behind Calvinism from charges of infidelity. The student of natural history who falls into the modern habits of speculation upon his favorite subject may safely leave Calvinistic theologians to defend his religious faith. All the philosophical difficulties which he will ever encounter, and a great many more, have already been bravely met in the region of speculative theology. The man of science need not live in fear of opprobrious epithets; for there are none left in the repertory of theological disputants which can be specially aimed at the Darwinian advocate of continuity in nature. The Arminian, the Universalist, and the Transcendentalist long ago exhausted their magazine in their warfare against the lone camp of the Calvinist.

The Calvinist has long stood in the breach, and defended the doctrine that order is an essential attribute of the divine mind, and that whatsoever proceeds from that mind conforms to principles of order; God "hath fore-ordained whatsoever comes to pass." The doctrine of the continuity of nature is not new to him. In extending his conception of the reign of law, the modern man of science is but illustrating the fundamental principle of Calvinism.

Proceeding with the analogy, we notice first, that

IV. *Darwinism is not a Theory of Universal Progression.*

Darwinism conforms to the facts both of nature and of the Bible in not being a theory of invariable and progressive development. The organisms that succeed each other under the action of natural selection are not necessarily always of a higher or of a better kind. There may be, by the action of this law, either advancement or degradation. The condition necessary to secure the continued existence of a form of life is, not that the form is the best that *could* be prepared for its position, but that it is the best which could be secured under the actual scheme of operations. For example: Darwin is careful not to say that we are descended

from apes, but takes pains to speak of our progenitor as being an *ape-like* creature ;¹ from which, according to his theory, the apes may have branched off as far in one direction as we in the other. On his theory an organ or an instinct that might be of great advantage in one condition of things may in another be indifferent, or actually disadvantageous, and so may become rudimentary, or wholly aborted. Then, on return of the former circumstances and with fresh competition, the animal, or organ, would succumb, and the race become extinct. So this theory comprehends *extinction* of species and organs as well as their production, and *degradation* as well as advancement. Indeed the advancement of some is sure to be accompanied by the degradation of others ; and the extinction of the more generalized forms of life is the very reason why we have the present diversity.

In this respect the theory, in its application to the human species, may well consist with the teaching of the Catechism, that man was made in the beginning upright, but fell from his first estate ; and has in his fall, not unlikely, involved all nature to a certain extent with him. That new and superior moral element, which was added when man became man, and which constitutes his distinctive characteristic, is capable of being a hinderance as well as a help in the career of progress.

No organ is an advantage in itself. An organ can be of advantage only as it is in harmony with its environment. In nature the environment is undergoing constant change, which necessitates as constant adaptation on the part of the organism, in order to have its peculiarities continuously advantageous to it. The imposition of a moral faculty upon man's physical organism brought in a double source of danger. Through the perversion of that spontaneity which we call moral freedom, the high endowments of the human race became an active source of disharmony. In the moral world, sin, as to its effects, may be considered a maladjust-

¹ *Descent of Man*, Vol. i. pp. 131, 148, 151, 153, 226 ; Vol. ii. pp. 312, 345, 366.

ment of the soul to the conditions of its best existence. The soul must reap the wages of such voluntary maladjustment in bearing as a burden what, properly used, would be a help. The conscience of a sinner is an impediment. The moral powers of a rebellious race are a burden to it. They may become rudimentary. It is a question of revealed theology whether they ever become wholly abortive and the soul itself annihilated. A being with a moral nature ill used is of all creatures most miserable. It impedes him in his search for happiness, as the antlers of a stag, however useful in their place, interfere with his progress through a jungle.

Weight is of advantage to the elephant for certain purposes, but is a manifest disadvantage when searching for food in miry ground or where the wild goats pasture. So the very greatness of man's endowments are a source of misery to him so long as he persists in trying to stand on slippery places. Man's desires greatly outstrip the earthly means of gratification. His worldly ambition is often as much out of proportion to the provision made for its satisfaction here, as is the unwieldy form of the mastodon to the scant vegetation of an arctic summer. Indeed, it is a serious question whether civilization may not end in the destruction of itself. The strength and present safety which result from political union and the division of labor tend to diminish the power of the individual to care for himself. Civilization produces changes in the human constitution analogous to those produced in brute animals by domestication. The balance and harmony of the individual are disturbed by the enormous development of particular capacities. Why should an ox want to weigh a thousand pounds? Why should a horse wish to be bred into the shape of a greyhound? Why should a man desire to unfit himself for everything else for the sake of acquiring facility in making the fifteenth part of a pin? Through the action of natural selection in the human race, the social and political organism is likely to be developed at the expense of the individual. The individual, as a social force, is already becoming a mere

rudiment. He is in danger of becoming an organ rather than a being.

V. *The Organic Connection of the Human Race.*

The Calvinistic doctrine of the spread of sin from Adam to his descendants has also its illustrative analogies in the Darwinian doctrine of heredity.

The Calvinist holds that Adam's sin insured that of the whole race. Corruption was transmitted from Adam to all his descendants. The Calvinist cannot regard mankind as a loose aggregation of individuals, with nothing but an ideal bond of connection; but in a most profound sense the children of Adam compose an organic whole. Adam was not merely a "progenitor, but, as it were, a root," by whose corruption "the whole human race was vitiated." When Adam corrupted himself "he transmitted the contagion to all his posterity." From the "corrupt root of our first known progenitor corrupt branches proceeded, which transmitted their corruption to the saplings which sprang from them." "The children, being vitiated in the parent, conveyed the taint to the grandchildren; and so the corruption commencing in Adam is by perpetual descent conveyed from those preceding to those coming after them." Calvin calls this viciousness of human nature "natural, to prevent any one from supposing that each individual contracts it by depraved habit, whereas all receive it by a hereditary law."¹

We must, however, pause, even in the midst of this exposition, to remark that notwithstanding the hereditary transmission of sinful tendencies, Calvin thinks he sees his way clear to absolve God from *direct* responsibility for sin. "The blame of our ruin rests with our own carnality, not with God; its only cause being our degeneracy from our original condition. . . . It is plain that this wound was inflicted by sin; and therefore we have no ground of complaint except against ourselves."² We confess that it is difficult to give logical

¹ See Calvin's *Institutes of the Christian Religion*, Book ii. chap. 1, sects. 5, 6, 7, 8 and 11.

² *Ibid.*, sec. 10.

consistency to this language, except we adopt either the so-called New School theory, or resort to traducianism in explanation of the origin of the soul.

The New School party do not maintain that sin itself, or sinful qualities, are transmitted, but only that depraved conditions are transmitted to such extent that sin does infallibly occur in the soul which is the subject of these conditions. The *σάρξ*, or, in modern language, the whole automatic machinery of our nature, is disarranged; and the disarrangement is transmitted from generation to generation.

The New School Calvinists, however, would not accept, without qualification, the saying of their master that "our whole nature is a seed-bed of sin, and therefore can but be odious and abominable to God."¹ They cut the Gordian knot, and say man's fallen nature is a "seed-bed of temptation," and the *character* which *certainly*, but not *necessarily*, develops in those conditions is odious, — a distinction which those who cannot see the difference between a *moral* motive and a locomotive are slow to recognize.

On the other hand, the traducianist, by introducing a counter mystery, analogous to that entertained by the Darwinians, pushes the original problem respecting transmitted sin a little farther back and out of sight. The creationist says, with Calvin, that the responsible soul is in every case breathed fresh from God, but in the case of man is at once joined to an infected body. While the traducianist contends that the soul, in all its length and breadth, is propagated by natural generation. The language of the Westminster Catechism is, "All mankind, descending from him [Adam] by ordinary generation sinned in him, and fell with him in his first transgression."² Professor Shedd³ maintains with great spirit that this means "that all men were, in some sense, co-existent in Adam"; "that all men were, in some sense, co-agents in Adam"; that "the will of Adam was not the will of a single

¹ Institutes, Bk. ii. chap. 1, sec. 8.

² Larger Catechism, Question xxvi.

³ See Essay on the "Doctrine of Original Sin," in *Christian Review*, No. 67. Reprinted in *Discourses and Essays* (Andover, 1862), pp. 218-271.

isolated individual merely ; it was also, and besides this, the will of the human species — the human will generically ” ; that “ each individual of the human race is in some mysterious, but real manner a responsible partaker in Adam’s sin — a guilty sharer, and, in some solid sense of the word, co-agent in a common apostasy.” Professor Shedd maintains that Augustine, Luther, John Owen, and President Edwards were advocates of this view. What should really be said of Augustine and President Edwards, however, is, that according to Professor Shedd’s logic they *ought* to be advocates of his view in order to be consistent in maintaining, as both did, the doctrines of free-will, original sin, and total depravity. Edwards uses the following language : “ There is no sure ground to conclude that it must be an absurd and impossible thing for the race of mankind truly to partake of the *sin* of the first apostasy, so that this in reality and propriety shall become their sin ; by virtue of a real *union* between the root and branches of mankind (truly and properly availing to such a consequence) established by the Author of the whole system of the universe ; to whose establishments are owing all propriety and reality of union in any part of that system ; and by virtue of the full *consent* of the hearts of Adam’s posterity to that first apostasy. And therefore the sin of the apostasy is truly and properly theirs.”¹ The italics are his. This language probably loses its value to the traducianist by virtue of the peculiar views Edwards elsewhere advances regarding the relation of God to the creation. The significant thought is that Edwards’s conception of the presence of God in creation does not interfere with his conception of him as creating by law and through an “ established course of nature.” This is his language in another place : “ It is true that God by his own almighty power creates the *soul* of the infant, and it is also true that God by his immediate power forms and fashions the *body* of the infant in the womb ; yet he does both according to that *course of nature* which he has been pleased to establish.” He says that by

¹ Treatise on “ Original Sin.” Part iv. chap. 3.

nature "no more is meant than an established method and order of events, settled and limited by divine wisdom."¹

Passing, now, back to Augustine, we find that he devotes a special treatise to the question of the origin of the soul.² In this, while he does not advocate traducianism, he does, with great vigor defend it from the charge of heresy, and insists that, at any rate, it is an open question. In saying that God created all breath, the Scriptures do not — so Augustine contends — commit themselves to any metaphysical theory regarding the *mode* of creation. It may as well be indirect as direct. "I have created all [or every] breath,' is undoubtedly spoken of each individual soul. Well; but God also creates the entire body of man; and, as nobody doubts, he makes the human body by the process of propagation. It is therefore, of course, still open to inquiry concerning the soul (since it is evidently God's work), whether he creates it, as he does the body, by propagation, or by inbreathing, as he made the first soul."³ "All our question is as to the *mode* of the formation. Now, let us take the eye of the body, and ask, Who but God forms it? I suppose that he forms it not externally, but in itself, and yet, most certainly, by propagation. Since, then, he also forms the human spirit or soul, in itself, the question still remains, whether it be derived by a fresh insufflation in every instance, or by propagation."⁴

In reading these discussions it is plain to see that theologians are as much puzzled to form a satisfactory conception of the *origin of each individual soul* as naturalists are to conceive of the *origin of species*. Their difficulties are, indeed, nearly identical. In both instances they are forced to take hold of the old questions so hotly disputed between the nominalists and the realists. Let us be warned by the fruitlessness of these discussions to recognize the limits of human thought, and learn to be content with such partial knowledge of the

¹ Treatise on "Original Sin." Part iv. cap. 2.

² De Anima.

³ De Anima, Lib. i. c. 21.

⁴ De Anima. Lib. i. c. 22. In further confirmation of this view of Augustine's position, see in the same work, Lib. i. cc. 6, 13, 16, 18, 19, 26, 28, 33; Lib. ii. cc. 10 and 20; Lib. iv. cc. 2, 15, 38.

divine methods of activity as our minds can really compass. It would have been well if on some of these insoluble questions theologians had maintained either the dignified reserve of Scripture, or had displayed the caution of Mr. Darwin in his speculations concerning pangenesis, which he expressly labels a "provisional hypothesis." It is unjust to blame Mr. Darwin, as Professor Bowen does,¹ for modestly limiting himself to a consideration of the Creator's method in the production of vital phenomena, instead of extending his speculation so as to cover the method of creation in general. The naturalist, as such, is not compelled to be a theologian.

VI. *Evolution, Correlation, Design, Fore-ordination, and Free-Will.*

The adjustment of the doctrines of fore-ordination and free-will occasion perplexity to the Calvinist in a manner strikingly like that experienced by the Darwinian in stating the consistency of his system of evolution with the existence of manifest design in nature. The doctrine of free-will stands in as much danger of being strangled by the encircling coils of fore-ordination, as the doctrines of final cause and particular providence do by evolution.

The most puzzling question which theologians have to deal with is that which concerns God's responsibility for the existence of sin. It will not do to say that God is in no way responsible for the existence of sin, since his foreknowledge must have comprehended all things, and no sin could have existed without the creative fore-ordination of a system that was known to include sin and suffering among its incidents. Nor can it be correct to say that God is the direct author of sin [evil], for that would contradict the clearest affirmations of our consciousness concerning personal guilt. It would also destroy the idea of any degree of finite freedom of will, and compromise the goodness of God. These apparently contradictory ideas are reconciled in our systems

¹ *Modern Philosophy*, p. 124.

of theology by making a distinction between the ordaining and the permissive decrees of divine power. God *permits* many things to occur which are not in the *direct range* of his original design.

This method of statement amounts to the same thing as changing the point of view from the circumference of the system to its centre. From the centre we do not look upon each part singly, but view the parts in their relation to the whole. From this point of view the narrow sphere of human freedom is encircled in the more comprehensive folds of the system as a whole. Sin and its consequent evil occur as incidents to that measure of freedom which it has been thought best to give a portion of the creation. In stating the theological problem we do not say that the final cause for the creation of a particular sinner is that he may commit sin and be punished for it. But the reason for his existence resolves itself into the more comprehensive one of the nature of all things, and the relations of the parts of the creation to the whole. The Calvinist assumes that the highest good of the whole is consistent with that constituted order of things in which sin is allowed to exist, and in which the freedom that makes sin possible and actual may be put to good use, and even the wrath of man be made to praise God. It is not difficult to see that in these speculations theologians are struggling with problems concerning final causes far deeper than those which face the scientific evolutionist. The problem of the theologian is as much deeper than that of the man of science as the nature of a moral being is more profound than that of an irrational creature; or to the extent that eternity surpasses time.

The Darwinian hypothesis, in like manner with the Calvinistic, would regard creation from the centre instead of from the circumference, and insists on viewing the parts in their proper perspective. The sphere of one is the moral world, the sphere of the other the physical. In both, the main discussion of the question of final causes gathers about the constitution of the system as a whole, rather than about that

of the parts taken singly. The perfection of the parts is not absolute, but relative. Absolute perfection only resides in the whole, and the parts can be perfect only as related to the whole. The Darwinian refuses to accept as exhaustive that interpretation of design which limits the final cause to the narrow sphere of the immediate uses to which a form of organized matter is put by its possessor. In his sphere he makes the same distinction with the Calvinist between what is designed and what is incidental.

The scientific world is familiar with the so-called principle of correlation. In living organisms the parts are all *interdependent*. Any change in one part must be correlated by adaptive changes in other parts, or the harmony is destroyed. To use the standard illustration of Mr. Spencer: The Irish elk has horns weighing a hundred pounds. If these have been acquired through natural selection an extended series of changes must have simultaneously occurred in other portions of the skeleton, in order to render such enormous antlers serviceable. They are used for purposes of offence and defence. But an increase of size can only be advantageous when there is an increased development of the supporting bones and muscles. The skull must be thickened; the vertebrae of the neck must be increased in size; the ligaments and muscles which move these must be enlarged; the upper vertebrae of the back must be strengthened. Like changes must take place in the shoulders. "Still more there must be a simultaneous development of the bones and muscles of the fore leg, since each of these extra growths in the horns, in the skull, in the neck, in the shoulders, adds to the burdens which the fore legs have to bear." All these changes necessarily involve *disabilities*. The increased size of the animal makes a demand for more food. The branching horns are likely to impede the flight of the animal through the forest. And this whole circle of advantageous development is correlated to the antagonistic development in some other animal. Where there are no enemies there is no call for means of defence. The danger is first created and then the way of escape devised.

Through the perpetual recurrence of such correlations in nature the naturalist is brought to face the deep questions concerning omnipotence, and may discern the true solution of the problem of evil. The divine power seems to be limited by the nature of things. At any rate the author of nature has limited himself in regard to the creation. A creation in space and time is compelled to conform to the nature of space and time. There cannot be two hills without a valley, nor a *before* without an *after*. It would be an absurdity to construct a physical organism which did not conform to the laws of gravity and chemical combination in the system into which it was introduced. To impeach the wisdom of any part of a system we must understand the reason of the whole. A system, like an organism, is designed as a whole. The parts are correlative. The supposition of a universe in which the parts do not limit each other is a logical contradiction. Limitation is a necessary incident of creation. In defining God's omnipotence as "ability to do whatever is an object of power," we do not limit the divine power by any intractable and eternal substance. We only say that omnipotence is not a power which can transcend the law of logical contradiction; and that God has made matter what it is for reasons best known to himself. Such limitations to power as appear in the organic world are analogous to those revealed in the moral system of which Calvinism gives the completest summary and the soundest interpretation.

For example, the Calvinist need not say that the character of Judas was designed for what it is in itself. He might say a general system was designed in which Judas's crime was permitted as an incident which could be put to good use. The Calvinist need not say that the final cause of the creation of the wicked was their reprobation. But the reprobation of the wicked may come in as a circumstance subsidiary to the general ends of the moral system that is created. It was better to have the system as a whole, notwithstanding that perversion of freedom, than not to have the system at all.

Thus the character of God may be shielded from the imputation of direct responsibility for sin ; since his omniscience enables him to look beyond incidental evils to an ulterior good, and to make use in his general system of the perverted powers of those who sin against him. The happiness of the individual creature would seem at first sight to be the reason for his creation. But the Calvinist learns so to exalt the principles of justice and holiness, and the ideas of law and the glory of God, that the happiness of the individual retires to a very subordinate place among the reasons that justify his creation and continuance. As it is said : " In very deed for this cause have I raised thee up, for to show in thee my power ; and that my name may be declared throughout all the earth " (Ex. ix. 16 ; Rom. ix. 17).

Not only is the Calvinist accustomed to look with submissive spirit upon the misery of the wicked on account of the requirements of the general system ; he is also led by comparison to speak disparagingly of the value of the happiness of the obedient. The elect are not led to believe that they are chosen for good in themselves that distinguishes them from other men, nor because they have greater capacity for happiness than others, but, before divine wisdom, their election depends upon the general requirements of the moral system chosen, and the ulterior uses to which they may be put. It is this idea that makes self-sacrificing missionary zeal so constant an outgrowth of Calvinism. Calvinistic preachers use this thought with powerful effect in securing the virtues of humility and self-forgetfulness. The reason for giving the elect more privileges than others does not lie in any antecedent personal superiority over others. They were all alike vessels of wrath ; and some of them were the chief of sinners. But the reason for the choice of them to become vessels of mercy lay in their relations to the all-comprehensive divine plan.

In the language of political economy, the Calvinistic conception of the Christian scheme, while keeping in prominence two distinct elements of worth in a soul, viz. the value in

use and the value in *exchange*, seems unduly to emphasize the latter. The first of these is the value of the being to himself, or his personal capacity for happiness. The second is his value to the universe as he fills a particular place in the general scheme of creation. The redemptive agencies which are set at work by an allwise Creator must keep in view both these elements of value. Wisdom cannot permit one to be swallowed up by the other. We are not at liberty to put asunder what God has joined together. The salvation of a soul is both an end and a means. In the evangelical conception neither of these considerations stands alone. Christ would save a soul, but only in such a manner as will not (in the existing order of things) interfere with his saving other souls, and in such manner as will allow him (in the existing order of things) to reveal all sides of his own character, and all the hazards of moral freedom. It passes our powers to estimate the amount of happiness secured to the apostle Paul by his redemption. But, in the broader outlook, the transcendent gain secured in his conversion is to be found in the transmitted effects of his conversion as he became a preacher of righteousness to the Gentiles, an illustrious example of self-devotion to subsequent generations, a systematizer of theology, and a monument of the power of divine grace to transform the heart of an obdurate man. The universe will doubtless derive indefinitely more of good from its acquaintance with the life and writings of Paul, and from the direct influence transmitted through him to them than Paul himself will ever derive from getting to heaven.

The reasons for the continuance of the saints in the earth have more warrant from the use to which they may be put in revealing the glory of God, than from any capacity they may have for individual enjoyment. Calvinism is opposed utterly to all low forms of utilitarianism, and exalts ideal good and remote results to the highest degree of importance.

Now, if Darwinism has any difficulty with the subject of final causes, the problem is solved on principles analogous to those which underlie Calvinism. In his attempts to construct

a system of theology out of the facts of history and revelation, the Calvinist is dealing with the profoundest questions of design. There is something truly sublime in the boldness with which he faces the dark question of reprobation, and attempts to reconcile this doctrine with the apparently antagonistic doctrines of the power, the wisdom, and the goodness of the Creator.

The resoluteness with which the Calvinist propounds the doctrine of election, with all its humiliating consequences to human pride, is likewise heroic. But in charging Calvinists, as some do, with having exalted God and his glory at the expense of due recognition of the importance of the happiness of the individual man, they are charging them with the acceptance of a truth of the very widest application. Scientific investigations are constantly raising analogous (and, so far as we can see, not essentially different) questions to these that have long been discussed in speculative theology. But certainly the men of science can by no possibility have any more staggering phenomena to deal with than the revealed facts concerning sin, freedom, election, and foreknowledge. The schemes of the physical philosopher stop far short of attempting to comprehend eternity, past or future. They only consider a section of time. They but touch the surface of problems in causation and design which theologians are compelled to probe to the core. They drop their lines only in the shallows of the great ocean of which theologians must sound the depths. But there are for the true man of science, as well as for the profound theologian, glimpses of a higher and more comprehensive design than appears in the immediate uses to which an advantageous circumstance is put.

To the student of natural history there are so many things which indicate the genetic relation of succeeding species with one another, that when he essays to interpret the ultimate designs of the Creator he is compelled to assume that the revelation of *method* and *order* in nature is a higher end, and so a more important factor in the final cause of the creation,

than the passing advantages which the organic beings derive from it as the scheme of nature is unfolding. The Darwinian view of the life of organized beings is, that they are pilgrims and strangers, all of them, and have to put up with such accommodations as the reign of general laws and the requirements of their fellow-travellers will allow. He does not find, and, like the Calvinist, he is not bound to find, absolute perfection in each individual; but only such perfection as is consistent with the requirements of the general scheme.

It is the glory of the Creator to accomplish a variety of objects by simple means. This "law of parsimony" so commends itself to our reason that we cannot well refuse assent to it. Infinite wisdom would not be infinite wisdom, unless it accomplished its ends by the simplest means, and reached them by the shortest method. That is certainly true. But there is always the underlying question, What is the end to be accomplished? If, for example, it be a canal for transportation, a straight canal is the shortest means to the end. But if the design of irrigation be added, a very crooked canal may be the most economical contrivance. If the design had been to get Israel from Egypt to the promised land in the shortest time, there was a direct road, and (in the opinion of the evangelical theologian) there was unlimited power to perform miracles. But if there was the added design of such discipline for the chosen people as should adjust them into a vast scheme by which God is controlling a moral universe, then the shortest road may well be a very round-about one, and the wanderings in the desert may be the straightest path to the complete fulfilment of their mission.

De Quincey said that he did not tell the tragic story of his life for the sake of the story, but for the flowers and foliage which clustered about it. The story was but the support, around which a vine should twine. To a creature of mere sensation, the foliage, the flowers, the fruit, and the shade might appear to exhaust the useful qualities of the vine. But to reasoning man there is all this, with the addition of a still nobler element of use, viz. the revelation in its struc-

ture, of its law of growth, and of its generic affinities. What if we have opened to us evidence not only of the continuity of a single vine or species, but of whole genera and families and classes and orders in the animal and vegetable kingdoms! Is anything too hard for the Lord? Is it impossible for him to give us bread and to satisfy our reason in the same substance? Far be it from us to say that this is impossible. The true and full statement of the doctrine of final cause involves, as we have already shown,¹ the recognition of all the uses which the object serves in the total plan of the Creator. That is its sufficient reason for existence.

The tendency of mind which leads us to seek for the bond of unity and order which appears in similar and analogous phenomena is among the noblest impulses and the highest endowments of the soul. The gratification of that tendency *must* constitute an important part of the reason of our existence. The adaptation of the creation to this tendency of our minds is among the most impressive and important of the contrivances apparent in nature. This introduces us to our next comparison.

VII. *The Limits of the Speculative Reason which appear in the Calvinistic and the Darwinian Hypotheses.*

The philosophical student cannot fail to be impressed by the analogy between the Calvinistic rule defining the attitude of reason toward the revelation of the Bible, and that guiding the modern naturalist in his interpretation of nature.

Without pausing to consider how much of approval it implies, the theological opponents of Darwinism sometimes say that Darwinism is not *proved*, but it may be a very good *working hypothesis*. This opens the way to some remarks upon the common ground regarding the nature of proof, occupied by both the defenders of a positive revelation of the Bible and systematic naturalists. They are both alike

¹ See Bib. Sac., Vol. xxxv. pp. 374-381. Also the Author's *Logic of Christian Evidences*, Part ii. chap. i. pp. 104-122.

opposed to what may be called the expectation of an absolute and exhaustive knowledge of divine things. Neither expects or requires demonstration. Both content themselves with what is called probable or moral evidence.¹

The proof of an hypothesis is that it works well. You can make discoveries by it. It explains or co-ordinates complicated phenomena which otherwise are confused and unintelligible. The hypothesis furnishes the clew by which we thread our way through the phenomenal labyrinth. The proof that we have the right clew is the extent to which it leads us through a complicated mass of phenomena. Christianity, considered as an external revelation, is a mass of purported historical facts. We have first to prove that the phenomena really appeared. In proof that the history is true we proceed to apply a variety of hypotheses, and to eliminate those which are unsatisfactory.

To begin with, we are at liberty to suppose that this purported body of facts are fables or myths or pure fabrications. It is not necessary here to explain on what ground these hypotheses are rejected. Suffice it to say that the only hypothesis which has worked well,—i.e. which has not raised more difficulties than it has explained—is, that the Bible is true history, and that the writers of it were competent witnesses as to what they saw and heard, and as to the value of the documents which they used.

Now, in order to explain these historical phenomena we have to make a still farther use of hypothesis. Are these facts *natural* or *supernatural*? Here, too, demonstration is out of the question. It is not a subject of abstract logic, but of inductive evidence. The belief of the writers that they were inspired, and of the actors that they were for special purposes and seasons endued with supernatural power, coupled with their manifest sobriety and sanity; the contrasts between this system of purported revelation and other systems that have been presented for the consideration of the world; the effects of this system in the development of history and

¹ See *Logic of Christian Evidences, Part i.*

on the individual believer, — these and a great number of other concurring facts are so harmonized by the hypothesis of supernatural intervention that few well-balanced minds who have fully considered the evidence can resist assent to the theory that a supernatural factor is present. The hypothesis of inspiration and miraculous intervention works so well, and the hypothesis of imposture and delusion works so ill, that a heavy burden of proof comes upon him who denies inspiration and miracle. The reasoning is not such as can be compressed into the hard and fast forms of a syllogism. For no two persons can ever have the same conception of the major premise. It is cumulative evidence, depending for its force upon a variety of considerations, including the personal experience of a sense of dependence arising from a feeling of guilt and of the natural limitations to the development of our capacities, and including also the success and diligence with which we have studied the Bible and given attention to the problems of human history.

The so-called evangelical school of theology emphasizes our dependence upon a positive revelation of God which is outside of nature, and rejects “absolute” religion. It insists upon our anchoring our speculations to a solid body of facts. This rule has been well stated as follows:¹ “The province of human reason in interpretation is to ascertain what the Scriptures teach; to put its varied teachings in systematic form; to construe them so as to shun obvious contradictions with each other and with the indisputable testimony of sense and of unperverted reason; and humbly to bow to them when ascertained and determined, however incomprehensible, unwelcome, or irreconcilable with our feelings, judgments, or predilections. This gives reason a very high office in ascertaining and accepting the teachings of revelation, a very humble office as an original authority touching any matters in regard to which God speaks in his word. . . . Reason soars beyond its true level when it assumes to judge what can or cannot be true or possible relative to the infinite God

¹ Prof. Atwater of Princeton College, N. J., in *Bib. Sac*, xxi. p. 70.

— what, therefore, he cannot mean to declare, although he seems to declare it, in his word. Human reason is competent to no such office. It cannot span infinity.”

The devout believer in inspiration finds no insuperable difficulty in accepting the mysteries that are revealed in the Bible, such as those relating to the mode of the divine existence, and those concerning the manner of the transmission of moral character from Adam to his posterity. For these mysteries pertain to questions of ontology, and have only that amount of difficulty which belongs to everything which we really try to fathom.

In a similar manner, the Darwinian says that his theory is not to be rejected simply on the ground of its mystery; for that belongs essentially to all facts and to any system that tries to unify them. Darwinism does not propose to explain ultimate facts, but only to interpret their significance regarding the mode or laws of the Creator's action. Thus Mr. Darwin, in his provisional hypothesis of pangenesis, presents some of the acknowledged facts concerning the multiplication of gemmules, as of small-pox and rinderpest, and endeavors to use them in formulating a theory of the proximate cause of the facts of inheritance and reversion. The most obvious objection to this hypothesis is, that it makes such extreme demands upon our imagination in trying to conceive the minuteness of the atoms. In reply he sagaciously remarks, “ that a cod-fish has been found to produce 4,872,000 eggs, a single ascaris about 64,000,000, and a single orchidaceous plant probably as many million seeds. In these several cases the spermatozoa and pollen grains must exist in considerably larger numbers. Now, when we have to deal with numbers such as these, which the human intellect cannot grasp, there is no good reason for rejecting our present hypothesis on account of the assumed existence of cell-gemmules a few thousand times more numerous.”¹

¹ *Animals and Plants under Domestication*, Vol. ii. p. 453 f. See *per contra*, J. Clerk Maxwell in Article on Atoms in the ninth edition of the *Encyclopaedia Britannica*.

At the same time, Darwinism is a powerful protest against unrestricted *a priori* methods. Darwin does not propose, after the free manner of some, to sail into the open sea: he intends never to be out of sight of land. He does not, indeed, hug the continuous shore of a continent; nobody can do that; but he threads his way through an archipelago. When he gets to the end he stops, or thinks he does. He will, for example, at present, have nothing to do with theories of spontaneous generation. We do not, by any means, give assent to all Mr. Darwin's conclusions. Neither, on the other hand, do we accept all the interpretations that have been put upon the Bible. How could we? For the interpreters, not being inspired, have made many grievous mistakes. But it is a point of great value and significance that the best modern representatives of science, as well as the best theologians, alike recognize the importance of keeping their feet upon the ground, and are willing to fetter themselves with the objective facts of creation and revelation. They both accept the humble *role* of the interpreter of God's revealed systems—the one of organic nature, the other of human nature. The naturalist finds himself in the midst of a vast and accumulating mass of observations. The theory that species are genetically connected gives order and consistency to the facts, and brings in an element of purpose to much that otherwise seems purposeless. The growing difficulties of classification through the discovery of intermediate forms: the distribution of species through space and time as though they were genetically connected; the arrangement of species in clusters, like planets and their satellites; the persistent anatomical similarity in all species of the same class, even to the existence of the useless rudiments of aborted organs, together with the analogy of embryological development, convince him. If these facts do not point to community of descent in the species connected, then, so far as the revelation of the divine purpose is concerned, the universe seems unskilfully made. In the case of such complicated similarities, "to reject a real for an unreal, or at

least an unknown, cause," Mr. Darwin cogently argues, is to make "the works of God a mere mockery and deception. I would," he continues, "almost as soon believe, with the old and ignorant cosmogonists, that fossil shells had never lived, but had been created in stone so as to mock the shells living on the sea-shore."¹

VIII. *The Reign of Law.*

A further point of analogy between the Darwinian view of nature and the scheme of revelation defended by Calvinists relates to the method in which the Creator has transmitted his action during successive periods of time. Under both representations of the actions of the Creator law reigns supreme, and the main reliance for the dissemination of the divine influence is upon what are called natural means. The revelation of God in the Bible is progressive, and in general is by means of natural instrumentalities, with only occasional miracles. The revelation to Adam was very dim; that to Noah, and later to Abraham, was still far short of what appeared in the prophetic era of Jewish history; while the least in the kingdom of heaven, after Christ had come and the Holy Spirit had been poured out, was greater than John the Baptist. Thus through thousands of years, notwithstanding all the pressing exigencies of human history, the special revelation of God, by which alone we believe the world is to be saved, was left to run in a very contracted current, through a single family and their descendants. The *family* is chosen as the centre from which these influences are to spread. And still, even now the vast majority of the human race have not caught sight of a single beam of that light which radiates from Calvary. This reliance of an Almighty God upon human activity for the dissemination of that knowledge of him which reveals his brightest glory, and upon which depend the highest personal interests of mankind, is a mystery of infinite wisdom which we cannot hope to solve. It is a most inspiring truth of revelation that "the same Lord over

¹ *Origin of Species*, p. 130.

all is rich unto all that call upon him. For whosoever shall call upon the name of the Lord shall be saved" (Rom. x. 12, 13). But the next sentence of the inspired word throws us adrift, with nothing to support us but our faith in the sovereign wisdom of God. "How, then, shall they call upon him in whom they have not believed? And how shall they believe in him of whom they have not heard? And how shall they hear without a preacher? And how shall they preach except they be sent?"

It is also instructive, in this connection, to think of the means by which the evidence of the genuineness of the Scriptures is preserved. The providence that has preserved monuments and manuscripts and fragments of historical writers has not been what is called a particular, but a general providence. We have no miraculous proof of miracles. We have no inspired interpreters of inspiration. Use has been made of the caprices of the human mind (even of the peculiarities of the hand-writing, and the unwise monastic habits of misguided believers) to establish the credibility of the Bible. The very desolation that has come over the seats of early civilization has preserved from destruction the monuments confirmatory of the Scriptures. The thread of natural causes which leads us by a process of induction back through the unfolding stages of the revelation of the Bible has nowhere been absolutely broken by miracle. Miracle and special providence have only come in to incorporate new fibres with the lengthening thread. And we are wont to say that now the day of miracles is past; and have always acknowledged that these special interpositions have been limited to well-defined epochs of history.

This *gradual development of revelation* and its spread by natural agencies, which are so evident in the providential history of the scheme of redemption, fall in with the expectations of that scientific bent of mind which has constructed the Darwinian theory. Miracles are neither to be introduced to explain phenomena, nor expected for human deliverance, unnecessarily. Clearly, there is a reason for their

use in a providential government of moral beings, which does not exist previous to the creation of such beings. Miracles are for moral ends, and without positive evidence we have no reason to look for them in the developments of an irrational creation. It is no more inconsistent with the goodness of God that he did not interfere with organic life by special creation for many million years before the appearance of man, than that he has interfered so little by miraculous manifestations with the spread of the gospel. If he has relied in so large degree upon natural means for the dissemination of the moral forces of his spiritual kingdom, there is no *a priori* presumption against his having relied wholly upon such means in the development of the lower kingdoms of organic life.

But the limitations of space, rather than the lack of material, compel us to close. The conclusions which we have endeavored to make evident are as follows. If Calvinism is a foe to sentimentalism in theology, so is Darwinism in natural history. If Darwinism in its philosophy naturally allies itself to "realism" so does the theology of Augustine. If Darwinism appears to banish design from nature, and to be fatalistic, it is only because it is liable to the same class of misunderstandings against which Calvinism has had so constantly to contend. Are Christian apologists satisfied with *moral evidences*, and ready to rest their case on *probabilities*? Darwinians are often *more than ready* to accept similar evidence in natural history. Finally, a plan of development, in which there appears "first the blade, then the ear, after that the full corn in the ear," is as manifest in *human* history as in *natural* history; and we may conclude that, not improperly, Darwinism has been styled the "Calvinistic interpretation of nature." Through philosophic study both of the system of nature and of grace we come back at length to the central throne of God, from whose all-comprehensive ideas streams of creating and directing power flow across the gulf of time in continuous and orderly measure.